

WHAT IS CLAIMED IS:

1. A motion controlled handheld device comprising:
  - a display having a viewable surface and operable to generate an image;
  - a motion detection module operable to detect motion of the device within three dimensions and to identify components of the motion in relation to the viewable surface; and
  - a motion response module operable to identify a base reference position, to track the motion of the device in relation to the base reference position, to modify the image in response to the motion, to detect a predetermined pattern of motion of the device, to maintain the image without adjustment during the predetermined pattern of motion, to detect a completion of the predetermined pattern of motion, and to reset the base reference position upon detecting completion of the predetermined pattern of motion.
- 15 2. The motion controlled handheld device of Claim 1, wherein:
  - the base reference position identifies a baseline orientation of the device, the baseline orientation represented by baseline components; and
  - the motion response module is further operable to track the motion of the device in relation to the base reference position by comparing the components of the motion with the baseline components.
- 20 3. The motion controlled handheld device of Claim 1, wherein the base reference position associates a physical position with a virtual position in the image.

4. The motion controlled handheld device of Claim 1, further comprising:
  - a gesture database comprising a plurality of gestures each gesture defined by a motion of the device with respect to a first position of the device; and
    - 5 command; and wherein
    - the motion response module is further operable to compare movement of the device with respect to the base reference position against the gestures to determine a received gesture, to identify the corresponding command mapped to the received gesture, and to execute the identified command to modify the image.
- 10 5. The motion controlled handheld device of Claim 4, wherein the gesture database further defines each of the gestures using a sequence of accelerations.
- 15 6. The motion controlled handheld device of Claim 1, wherein the motion response module is further operable to determine a current position of the device in relation to the base reference position and to modify the image based upon the current position of the device.
- 20 7. The motion controlled handheld device of Claim 1, wherein the predetermined pattern of motion includes motion defined by a predetermined pattern of accelerations with respect to the base reference position.

8. The motion controlled handheld device of Claim 1, further comprising:
  - a first accelerometer operable to detect acceleration along a first axis;
  - a second accelerometer operable to detect acceleration along a second axis, the second axis perpendicular to the first axis; and
- 5 a third accelerometer operable to detect acceleration along a third axis, the third axis perpendicular to the first axis and perpendicular to the second axis; and wherein
  - the motion detection module is further operable to detect motion of the device using the first accelerometer, the second accelerometer, and the third accelerometer,
  - 10 the motion detection module further operable to distinguish between tilt of the device and translation of the device.

9. A method for controlling a handheld device comprising:  
generating an image on a viewable surface of the handheld device;  
detecting motion of the device within three dimensions;  
identifying components of the motion in relation to the viewable surface;  
5 identifying a base reference position;  
tracking the motion of the device in relation to the base reference position;  
modifying the image in response to the motion;  
detecting a predetermined pattern of motion of the device;  
maintaining the image without adjustment during the predetermined pattern of  
10 motion;

detecting a completion of the predetermined pattern of motion; and  
resetting the base reference position upon detecting completion of the  
predetermined pattern of motion.

15 10. The method of Claim 9, wherein the base reference position identifies  
a baseline orientation of the device, the baseline orientation represented by baseline  
components, the method further comprising tracking the motion of the device in  
relation to the base reference position by comparing the components of the motion  
with the baseline components.

20 11. The method of Claim 9, wherein the base reference position associates  
a physical position with a virtual position in the image.

25 12. The method of Claim 9, further comprising:  
maintaining a gesture database comprising a plurality of gestures each gesture  
defined by a motion of the device with respect to a first position of the device;  
maintaining a gesture mapping database mapping each of the gestures to a  
corresponding command;  
comparing movement of the device with respect to the base reference position  
30 against the gestures to determine a received gesture;  
identifying the corresponding command mapped to the received gesture; and  
executing the identified command to modify the image.

13. The method of Claim 12, wherein the gesture database further defines each of the gestures using a sequence of accelerations.

5 14. The method of Claim 9, further comprising determining a current position of the device in relation to the base reference position and to modifying the image based upon the current position of the device.

10 15. The method of Claim 9, wherein the predetermined pattern of motion includes motion defined by a predetermined pattern of accelerations with respect to the base reference position.

16. Logic for controlling a handheld device, the logic embodied in a computer readable medium and operable when executed to perform the steps of:

- generating an image on a viewable surface of the handheld device;
- 5 detecting motion of the device within three dimensions;
- identifying components of the motion in relation to the viewable surface;
- identifying a base reference position;
- tracking the motion of the device in relation to the base reference position;
- modifying the image in response to the motion;
- 10 detecting a predetermined pattern of motion of the device;
- maintaining the image without adjustment during the predetermined pattern of motion;
- detecting a completion of the predetermined pattern of motion; and
- resetting the base reference position upon detecting completion of the
- 15 predetermined pattern of motion.

17. The logic of Claim 16, wherein the base reference position identifies a baseline orientation of the device, the baseline orientation represented by baseline components, the logic further operable when executed to track the motion of the device in relation to the base reference position by comparing the components of the motion with the baseline components.

18. The logic of Claim 16, further operable when executed to perform the steps of:

- 25 maintaining a gesture database comprising a plurality of gestures each gesture defined by a motion of the device with respect to a first position of the device;
- maintaining a gesture mapping database mapping each of the gestures to a corresponding command;
- comparing movement of the device with respect to the base reference position
- 30 against the gestures to determine a received gesture;
- identifying the corresponding command mapped to the received gesture; and
- executing the identified command to modify the image.

19. The logic of Claim 16, further operable to determine a current position of the device in relation to the base reference position and to modify the image based upon the current position of the device.

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20. The logic of Claim 16, wherein the predetermined pattern of motion includes motion defined by a predetermined pattern of accelerations with respect to the base reference position.

21. A motion controlled handheld device comprising:
  - means for generating an image on a viewable surface of the handheld device;
  - means for detecting motion of the device within three dimensions;
  - means for identifying components of the motion in relation to the viewable
- 5      surface;
  - means for identifying a base reference position;
  - means for tracking the motion of the device in relation to the base reference
- 10     position;
  - means for modifying the image in response to the motion;
  - means for detecting a predetermined pattern of motion of the device;
  - means for maintaining the image without adjustment during the predetermined
- 15     pattern of motion;
  - means for detecting a completion of the predetermined pattern of motion; and
  - means for resetting the base reference position upon detecting completion of
- 15     the predetermined pattern of motion.